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First record of *Epophthalmia vittata* Burmeister, 1839 (Insecta, Odonata, Anisoptera) from Dhaka, Bangladesh

Gouranga Kumar Biswas,[1] Amit Kumer Neogi,[1] Aaratrik Pal[2]

1 Entomology Branch, Department of Zoology, Jagannath University, Dhaka-1100, Bangladesh. **2** Department of Botany, University of North Bengal, Darjeeling, West Bengal, 734013, India.
Corresponding author: Amit Kumer Neogi, amit_jnu52@yahoo.com

Abstract
We report *Epophthalmia vittata* Burmeister, 1839 (Odonata, Anisoptera, Macromiidae) from Bangladesh for the first time, based on a specimen collected on 27 May 2016 in the National Botanical Garden, Dhaka. This is first record of any species of the family Macromiidae from Bangladesh. This new record exemplifies gaps in sampling for dragonflies in Bangladesh and suggests that additional research on odonates in the country is needed.

Key words
Dragonfly; Macromiidae; new record; geographic range extension.

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Introduction

Dragonflies (Anisoptera) are amphibiotic insects, and their life history is closely linked to aquatic habitats (Andrew et al. 2009), and mostly freshwater habitats like rivers, streams, marshes, lakes, and even small pools and rice fields (Tiple et al. 2012). Even though most odonate species are highly habitat-specific, some have adapted to urban areas where they exploit man-made waterbodies (Prasad 1995). Fraser (1933, 1934, 1936) studied the odonate fauna of British India. Subsequently Lahiri (1987), Mitra (1983), and Prasad and Varshney (1988) added to the knowledge of the diversity of Odonata on the Indian Subcontinent. In Bangladesh, earlier studies by Begum et al. (1977), Biswas et al. (1980), Chowdhury and Akhteruzzaman (1983), Chowdhury and Mia (1989), Chowdhury and Mohiuddin (1993), and Nomura and Alam (1995) exist. Silsby (2001) recorded 114 species of odonates from Bangladesh. Chowdhury and Mohiuddin (2011) documented 96 species from northeastern region of that country. Bashar (2014) recorded 48 species of odonates, including 6 newly recorded from Dhaka, Moulvibazar, Bandarban, Chuadanga, and Khulna districts. Khan (2015) documented 64 species, including 5 new distributional records for Bangladesh from 2 national parks of the north eastern region. Little work has been done in Dhaka in central Bangladesh. Only 31 species had been recorded from previous surveys (Begum 1977, Bashar 2014).

Methods

The new record was found as part of a larger study conducted from March 2015 to February 2016. Sampling was made once a week during entire study period in the three green area of Dhaka city. The sampling effort was uneven over various visits by the recorders. We recorded each

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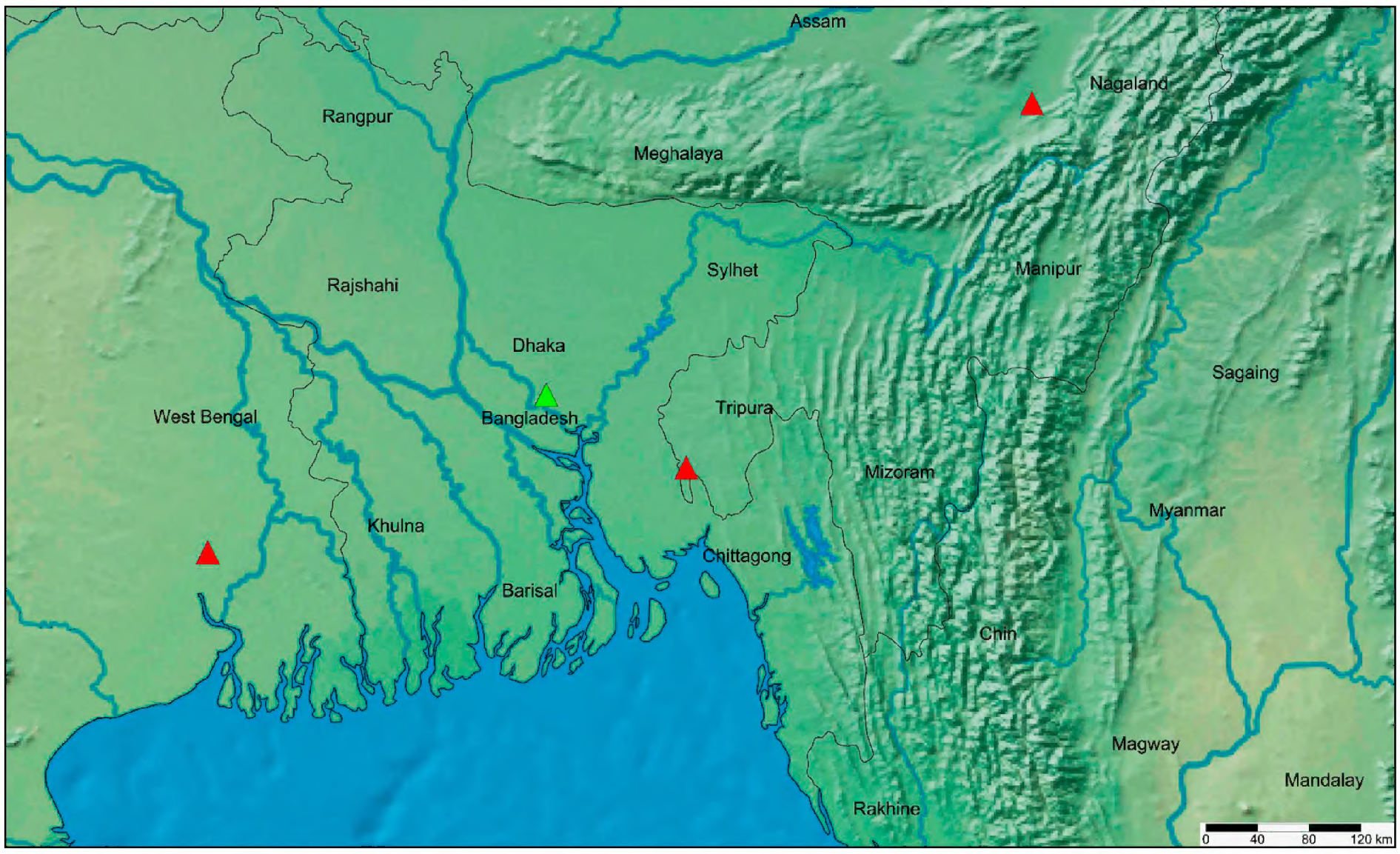

Figure 1. Map showing first record of *Epophthalmia vittata* (green triangle) from National Botanical Garden, Dhaka, Bangladesh. Red triangles: nearest occurrences of this species in India.

species of odonate that we saw. Most species, including the commonest ones, were photographed in the field for reference. Many species groups have distinctive characteristics on both upper and lower wing surfaces that need to be studied closely, and therefore it is not always possible to see these without first capturing specimens. We have written permission from local forest officials to catch odonates to allow for further identification. Collected specimens are preserved at Entomology Lab, Department of Zoology, Jagannath University, Dhaka. The collected specimen of *E. vittata* (Fig. 2) was identified using the key by Mitra (2006) and the original description of the species by Fraser (1936). Our identification was confirmed by K. A. Subramanian. Photographs were taken with Canon 700D and Fujiflim HS35Exr, with further editing using Adobe Photoshop CS4.

Abbreviations: Ax = Antenodal crossveins; Px = Postnodal crossveins

Results

Material examined. Bangladesh: Dhaka: National Botanical Garden (NBG), 23°49′23.4″ N, 090°20′57.3″ E, coll. Biswas & Neogi, 27 May 2016, 13.06 (GMT+6) local time, 1 specimen (JNUZoo1605O-27).

Epophthalmia vittata (Fig. 2) is a large species of dragonfly. Abdomen brass–colored, with black markings; ochreous annules; creating a brassy hue during flight. Head large, with ochreous, yellow markings; frons and vesicle dark metalic blue; a median yellow spot. Eyes dorsally touching. Synthorax metallic green. Wings hyaline, costal, subcostal, and cubical spaces amber-coloured. Discoidal cells (triangles) of forewing and hindwing similarly shaped. Hindwing angulated. Pterostigma black; membranes of wing black and white. Forewings with 17–18 Ax and 8–7 Px crossveins, hindwings with 11–12 Ax and 9–10 postnodal veins.

Discussion

The genus *Epophthalmia*, as well as the family Macromiidae, has not previously been recorded from Bangladesh. This species is known from Sri Lanka, India (Andaman Islands, Andhra Pradesh, Karnataka, Kerala, Maharashtra, Nicobar Island, Tamil Nadu, Uttar Pradesh, Nagaland, West Bengal), Indonesia (Java, Sumatra), Sri Lanka, and Vietnam (Subramanian 2010, Chaudhry 2013). *Epophthalmia vittata* was categorized as Least Concern according to Subramanian (2010).

Our new record is an important contribution to knowledge on the biodiversity of the odonate fauna of Bangladesh. Odonates are important biocontrol agents, and many odonate species inhabiting agro-ecosystems are important in controlling pest populations (Tiple et al. 2008). Our new record extends the distribution of this species to Bangladesh, approximately 115 km from Tripura, India (Fig. 1). We suggest that there are more unrecorded odonate species waiting to be discovered in Bangladesh. Importantly, *E. vittata* occurs in Dhaka, an over-populated region where biodiversity is under threat.

Figure 2. Habitus of a female of *Epophthalmia vittata* (Fraser) at National Botanical Garden, Dhaka, Bangladesh.

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Authors' Contributions

GKB and AKN collected the data and specimens, AKN wrote the text, AP identified the species and reviewed the text.

References

Andrew RJ, Subramaniam KA, Tiple AD (2009) A Handbook on Common Odonates of Central India. South Asian Council of Odonatology, Nagpur, India, 65 pp.

Begum A, Bashar MA, Dutta AK, Bashak LC (1977) A systematic note on the dragonflies of Dhaka City and its suburbs. Journal of the Asiatic Society of Bangladesh (Sciences) 2: 43–45.

Biswas V, Bashar MA, Begum A (1980) On a collection of Odonata from Bagerhat district, Khulna, Bangladesh. Indian Odonatology 3: 65–66.

Bashar K, Reza MS, Razzak MA, Rahman KMZ, Goda P, Howlader AJ (2014) Faunistic study of Odonata (dragonfly & damselfly) in some selected regions of Bangladesh. Journal of Entomology and Zoology Studies 2 (4): 1–6.

Chowdhury SH, Akhteruzzaman (1983) Dragonflies (Anisoptera, Odonata) of Chittagong University Campus, Bangladesh. Chittagong University Studies Part II 7 (1): 39–48.

Chowdhury SH, Mia MI (1989) Notes on some damselflies (Odonata, Zygoptera) of Chittagong University Campus. Chittagong University Studies Part II 13: 65–70.

Chowdhury SH, Mohiuddin M (1993) New dragonflies from Chittagong University Campus. Bangladesh Journal of Zoology 21 (2): 149–150.

Chowdhury SH, Mohiuddin M (2011) A check-list of the Odonta from the eastern region of Bangladesh with some taxonomic notes. University Journal of Zoology, Rajshahi University 30: 61–66.

Chaudhry MT, Mohsin AU, Bhatti MI, Javed RA, Abbas G (2013) First record of *Anaciaeshna jaspidea* and *Epophthalmia vittata vittata* (Odonata: Anisoptera) from Pakistan. Iranian Journal of Science & Technology 37A 4: 445–448.

Fraser FC (1933) The Fauna of British India, Including Burma and Ceylon, Odonata Vol. I. Taylor and Francis, London, 423 pp.

Fraser FC (1934) The Fauna of British India, Including Burma and Ceylon, Odonata Vol. II, Taylor and Francis, London, 398 pp.

Fraser FC (1936) The Fauna of British India, Including Burma and Ceylon, Odonata Vol. III, Taylor and Francis, London, 461 pp.

Khan MK (2015) Dragonflies and damselflies (Insecta: Odonata) of the northeastern region of Bangladesh with five new additions to the Odonata fauna of Bangladesh. Journal of Threatened Taxa 7 (11): 7795–7804. https://doi.org/10.11609/JoTT.o4314.7795-804

Khan MK (2015) *Gynacantha subinterrupta* Rambur, 1842: an addition to the odonates (Insecta: Odonata: Aeshnidae) of Bangladesh. Journal of Threatened Taxa 7 (10): 7704–7705. https://doi.org/10.11609/JoTT.o4276.7704-5

Lahiri AR (1987) Studies on the Odonate fauna of Meghalaya. Miscellaneous Publications, Zoological Survey of India, Occasional Paper 99: 395 pp.

Mitra TR (1983) A list of Odonata of Calcutta. Entomologist's Monthly Magazine 119: 29–31.

Mitra TR (2006) Handbook on Common Indian Dragonflies (Insecta Odonata). Zoological Survey of India, Kolkata, 124 pp.

Nomura S, Alam MZ (1995) A list of dragonflies collected in Bangladesh. Esakia 35: 135–140.

Prasad M, Varshney RK (1988) The Odonata of Bihar, India. Miscellaneous Publications, Zoological Society of India, Occassional Paper 110: 44 pp.

Subramanian KA (2005) Dragonflies and Damselflies of Peninsular India—A Field Guide. Project Life Scape. Indian Academy of Science, Bangalore, 118 pp.

Silsby J (2011) Dragonflies of the World. Natural History Museum/ CSIRO Publishing, London, 216 pp.

Tiple AD, Khurad AM, Andrew RJ (2008) Species diversity of Odonata in and around Nagpur City, central India. Fraseria 7: 41–45.

Tiple AD, Paunikar S, Talmale SS (2012) Dragonflies and damselflies (Odonata: Insecta) of Tropical Forest Research Institute, Jabalpur, Madhya Pradesh, central India. Journal of Threatened Taxa 4 (4): 2529–2533. https://doi.org/10.11609/JoTT.o2657.2529-33

Subramanian KA (2010) *Epophthalmia vittata*. The IUCN Red List of Threatened Species 2010: e.T167307A6326428. https://doi.org/10.2305/iucn.uk.2010-4.rlts.t167307a6326428.en